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Some specific Austrian insights on markets and the ‘new economy’ *

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Introduction

Economists disagree today on the elaboration of an adequate analysis of the markets which emerged with the development of the 'new economy' (NE). Two main interpretations, however, seem to prevail.

According to a first view, the usual tools of marginal analysis continue to fit for the study of the new realities which have to be considered and coped with. This does not mean that the traditional theory of pure competition in a private good economy provides the best analytical framework. The NE would imply the necessity of abandoning this theory and of replacing it with the so-called "new microeconomics". This view has been developed by various authors even if they do not always agree on the specific tools which are the most relevant to cope with markets in the NE.

Some of them (especially Shapiro and Varian, 1998) stressed the interest of using the concepts and mechanisms provided by the modern theory of information and tried to elaborate on them guidelines for firms or policy-makers. They indeed considered that markets for information goods cannot be analyzed with the usual tools of microeconomic analysis, requiring the assumptions of perfect information and perfect competition. On the one hand, firms are assumed to adopt price differentiation strategies. On the other hand, the existence of network externalities, of uncertain quality and of different types of increasing returns imply the existence of substantial information asymmetries. Finally, the probable opportunity of quasi-monopolies or oligopolies also requires the necessity of adequate anti-trust laws and policies.

Other authors (Gensollen, 2001, for example), who focus specifically on the nature and regulation of markets, are more eager to combine the analytical tools of public economics with those of "new microeconomics". On the one hand, what is argued is that Information Technologies (IT) and Internet permit an increasing independence of information as regards its usual means of storage and transportation. On the other hand, information appears to be a non rival good: consumers can use a good or a service without any possibility of excluding other consumers from this use. Finally, information generates important externalities and therefore, substantial decrease of consumption marginal cost: let us think of the possibility of individual consumers to get copies of an electronic text, to scan images or to reproduce video tapes with rather cheap equipment. All these phenomena are combined with drastic changes on the supply side, like the development of large production economies of scale or the increase of the part of information in the production costs. They imply, therefore, economic mechanisms which are close to those analyzed in public economics. Moreover, they also require new types of market regulation.

A second view concerning the NE rather stresses the idea of a revival of market coordination. It is often associated with the view of the emergence of a third period in the history of market economies. Market coordination was supposed to prevail in the ‘competitive capitalism’ of the nineteenth century. Hierarchical coordination is assumed to have become progressively predominant in the ‘trustified capitalism’ of the late nineteenth and of the twentieth centuries¹. The NE would mean the end of the prevalence of the modern managerial firm and the return of market coordination. The empirical support of this view – either explicit or implicit – is generally based on the increasing importance of electronic commerce among producers or between producers and consumers, seen as ‘the leading edge of the digital economy’ (US Department of Commerce, 2000, p. 7). This importance is frequently associated with two consequences. On the one hand, the development of B2B e-trade would foreshadow a future general substitution of market coordination to hierarchical coordination among firms. On the other hand, the development of B2C e-trade is supposed to generate a global process of desintermediation and, therefore, the future prevalence of direct relations between suppliers and demanders, often described as the modern materialization of the model of pure competition in the real world. This interpretation can be found, for instance, in the following text, written by Pamela Woodwall, present economics editor of *The Economist*:

“Economic theory has never described the real world completely ; it probably never will. Perfect competition does not exist, and many question marks remain over the precise role of technology and human capital in growth. In both these areas, economists have been doing some serious rethinking in recent years. However, neither IT nor globalization overturns the basic rules of economics. Indeed, IT does the opposite, by making economies work rather more as the textbooks say they should. The theory of perfect competition, a basic building-block of conventional textbook economics, optimistically assumes abundant information, zero transaction costs and no barriers to entry. Computers and advanced telecommunications help to make these assumptions less far-fetched.

IT, and the Internet in particular, makes information on prices, product, and profit opportunities abundant, serving it up faster and reducing its cost. This, in turn, makes market more transparent, allowing buyers and sellers to compare prices more easily. At the same time, advances in telecommunications have brought down transaction costs by slashing communications costs between far-flung parts of the globe and by allowing direct contact between buyers and sellers, cutting out the middleman. IT has also lowered barriers to entry by improving the economics of smaller units. In other words, the basic assumptions of perfect competition are starting to become true, better information, low transaction costs, and lower barriers to entry all add up to a more efficient and competitive market.” (*The Economist*, 1999, p. 93).

This view of the markets of the NE implies that the schemes used by conventional “old” microeconomic theory in characterizing a Competitive Economic Equilibrium (CEE) are more and more relevant to analyze the

¹ The expressions ‘competitive’ and ‘trustified capitalism’ are due to Schumpeter (1939, vol. I)

set of transactions which is daily taking place in modern market economies. It is predominant today in mass medias and in part of the empirical economic literature, and this is the reason why we will focus on it in the present contribution, even if some of the developments which follow are also relevant for an assessment of the first view. In section 1 of this contribution, we will recall the usual arguments which are put forward to analyze the NE as the empirical realization of the CEE model. After having stressed the limits of these arguments, we will try to show that some Austrian concepts and developments better fit to explain the economic impact of IT on present markets. This purpose is characterized in section 2 of this contribution. Finally, in section 3, we will refer to some concrete examples taken from the reality of electronic markets, in order to emphasize how these concepts and developments allow a better understanding of the working of markets in the NE, even if they exhibit some limitation.

1. The CEE model view of the ‘new economy’

Three arguments are generally put forward to support an interpretation of the impact of IT on e-markets based on the concept of CEE.

On one side, the very notion of economic equilibrium – either partial or general – presupposes the existence of a distinction between ‘given’ and ‘unknown’ economic magnitudes. As we know, in a CEE model, ‘given’ magnitudes correspond to ‘fundamentals’, i.e., initial individual endowments, consumers preferences and the ‘blueprint’ of techniques. Now, what is generally argued is that these ‘fundamentals’ are more easily identified in the NE. Thus, through the use of Internet, consumers are supposed to be able to better express their preferences while producers can take them clearly into account thanks to the interaction implied by the IT. Consumers’ tastes are explicitly revealed in accordance with the requirements of the CEE model.

On the other side, the usual Neoclassical assumptions seem to apply in our modern real world. Information is less and less costly and more and more shared by the participants to market: information asymmetries seem to decrease thanks to the generalization of electronic transactions. Transaction and search costs are also supposed to diminish with the reduction of intermediaries on markets. Spatial distortions also tend to disappear since any agent can buy or sell from any location in the world through the use of Internet. The generalization of auction markets is also put forward in order to show that tâtonnement processes are no longer theoretical devices but tend to emerge within the real world. Supply is also concerned by the use of IT. Inventories can be reduced through an electronic management of the supply chain of firms: therefore, the

assumption of full utilization of the productive capacities appears to become a better approximation of economic reality. The use of Electronic Data Interchange (EDI) and Internet also contributed to decrease the importance of transaction and search costs for suppliers.

Some empirical studies seem to confirm this general picture (Smith, Bailey and Brynjolfsson, 2000), even if some unsolved difficulties remain to explain the persistence of price dispersion on e-markets (ibid. pp. 104-105).

A more careful investigation of the markets of the NE, referring to Austrian concepts, however leads to some substantial objections.

The first objection we will raise is 'Hayekian'. Hayek indeed always insisted on the importance of individuals' heterogeneity on markets. As we know, his approach is based on the differences between individual preferences as well as those related to the subjective perceptions of the environment. According to Hayek, agents' heterogeneity does not exclude some mechanism of economic coordination. However, two conditions, at least, are required in order to obtain this result. On the one hand, 'external events' on which individual agents found their perceptions, expectations and decisions must belong to the 'same set' (Hayek, 1937, p. 37). Therefore, interpretations of the real world might differ but agents have to refer to a unique and common real world. On the other hand, agents cannot base their plans on purely external and objective facts or information, as those which are assumed to appear on the Internet. They must also include among their decision parameters some forecast of the future behaviours of other agents. This situation, therefore, involves the existence of heterogeneous subjective plans as well as strategic uncertainty. Now, if these two conditions are fulfilled, it means that the data on which agents base their decisions are no longer limited to the 'fundamentals' of the CEE model. They also include, indeed, the "subjective" data, which are related to their own specific positions within the mechanisms of social interaction of a market economy. The debate on social calculation, which Hayek participated in, confirms this view. Disputing the choice of a general equilibrium framework as a guide to take rational decisions in a socialist planned economy, Hayek contested the possibility for a central decision maker to have an explicit and codified knowledge of the parameters of calculation. He indeed argued that part of the information on the blueprint of productive techniques in the economy were only available in form of tacit knowledge related to "circumstances" (Hayek, 1935 / 1949, p. 155). In 1940, Hayek gave a convincing example of this problem, showing that it was hardly possible to have a codified and explicit knowledge of real markets and activities. Under these circumstances, he could not conceive of a central planner able to define, *a priori*, a

list of standardized commodities as well as a list of suppliers and demanders that would qualify for a sufficient characterization of any given market. From here, the apparatus of the General Equilibrium (GE) theory could not be relied upon if one is looking for a satisfactory explanation of the mechanisms of demand and supply that prevail in real markets. (Hayek, 1940 / 1949, pp. 188-189). Obviously, the objections put forward by Hayek are also valid for a market economy: it is impossible to define an objective list of ‘fundamentals’ independently of the subjective perceptions of agents. This type of objection is all the more relevant for the markets of the NE, where the life cycle of goods tends to be shorter and shorter and new commodities and services are appearing and disappearing at a quicker pace. Moreover, within the NE, it becomes more and more uneasy to define precisely what a good is and what a market is. Commodities are often supplied according to a ‘bundling’ context, in which it is difficult to distinguish the commodity itself from the bundle of services that are related to it. By the way, the use-value of a good is often imprecise *a priori* since it emerges from the interaction of consumers and producers. Thus, a computer or a computer system has no *a priori* use-value till the consumer interacts with the producer or intermediaries to define it *a posteriori*. This feature of IT goods has been often stressed in the literature (especially by Shapiro and Varian (1998), for instance), by arguing that information is a good related to experience, so that its utility cannot be appraised *ex ante*. The definition of the use-value of commodities (or services) is rendered even more complicate by the fact that, in the field of the e-commerce, the final transaction is often only indirectly linked with the electronic connection between one demander and one supplier (or intermediary). For instance, some of the services associated with electronic markets are free although they might contribute to the realization of final transactions.

It is also difficult to conceive of static ‘fundamentals’ in a world in which changes affect every day techniques, preferences and goods themselves. Indeed, in the NE, the interactions between suppliers on one side, but also between consumers, on the other side, which are emerging today are constantly adapting the changing environment implied by the adoption and diffusion of IT. This illustrates why, as soon as 1928, Hayek did not accept the static framework of GE theory but preferred to substitute to it what he called an “intertemporal price equilibrium” framework. Within this concept, time is described as a sequence of “flows” of “individual processes”. They form the “economic period” (the “year”), which constitutes the horizon of agents’ decisions (Hayek, 1928 / 1984, p. 72). Each temporal “flow” corresponds to a subdivision of the “economic period”, called “day” or “season”. When a new “day” or a new “season” begins, it includes a flow of new economic “processes” of production. Now, in each sub-period, according to Hayek, permanent changes affect what the CEE model calls ‘fundamentals’, namely, production techniques, as well as consumers’ preferences (ibid. p. 73). Therefore,

in his conception of intertemporal equilibrium, Hayek accepts the possibility of *real* disequilibria related to persistent changes of techniques and preferences (see the “voluntary saving” case in Hayek’s business cycle theory), which contrast with the *virtual* disequilibria of the Walrasian and neo-Walrasian theories of tâtonnement.

Finally, the conception of market coordination implied by the CEE interpretation of the NE is clearly contradictory to Hayek’s conception of the working of a market economy. According to the former interpretation, a market economy is indeed the outcome of voluntary behaviours, the intended consequences of which confirm the *a priori* individual objectives resulting from optimization behaviours. Now, for Hayek, a market economy does not refer to a ‘taxis’ but rather to a ‘kosmos’, namely, a self-organized order that results, on the contrary, from the unintended consequences of individual subjective plans. In such an economy, agents again are heterogeneous. Their knowledge of economic activities is not entirely codified and explicit, as it is in a CEE framework characterized by formal utility, production, demand and supply functions. Part of their knowledge is indeed tacit or related to specific “places” or “circumstances”. The situation of agents in their relations to knowledge might be described as a situation of “division” (Hayek, 1937 / 1949) or a “fragmentation of knowledge” (Hayek, 1973 / 1980, volume I, p. 16): each member of the society only knows a very limited part of “global” knowledge and any of them ignores most of the facts on which the working of the economic system rests. This kind of approach better fits with the realities of the NE, where self-emerging markets are the rule and their characteristics prevent agents from understanding what is going on at level of the global society. This is why the image of the “discovery process” better describes the NE than the abstraction of a complete set of interdependent markets related to objective mechanisms and purely codified information.

2. Some specific Austrian insights on the ‘new economy’

We will try now to develop a different conception of market economies, rooted in the Austrian tradition and able to provide a better framework for understanding market realities in the NE. Austrian economists of the past and the present offer, however, divergent views on the theory of market processes. Gloria-Palermo (1999) has convincingly pointed out the detail of the analytical origins of this divergence, showing the existence of a major difference between a “Kirzner – Hayek conception” which assumes “(without really demonstrating) that disequilibria signals are sufficient to move the system towards equilibrium” and “[derives] from this assumption

the conclusion that the market process constitutes an efficient coordinating device” (Gloria-Palermo, 1999, p. 125); and Lachmann's view, according to which “the possibility of inconsistency of plans challenges the traditional view of a tendency towards equilibrium” (Gloria-Palermo, 1999, p. 126). Our basic idea, here, is indeed to give up the view of a universal model of market which would express the essential features of any kind of market, and in which market failures or disequilibria might be characterized as simple frictions, imperfections, undiscovered profit opportunities or individual misperceptions. Therefore, our viewpoint does not only exclude the framework of the CEE model but also, to some extent, the “Kirzner-Hayek conception”. It is closer to Lachmann’s treatment of markets as “institutions” (Lachmann, 1986, p. xi) and therefore, implies to analyze the institutional features of the various types of markets. In this framework, different markets indeed imply various market processes, which permit to get rid of what O'Driscoll and Rizzo (1985) called Newtonian time, namely, Hayek's analytical time (O'Driscoll and Rizzo, 1985, pp. 81-82). Our preference for a Lachmann type conception does not exclude however the utilization of Hayek’s contribution to the analysis of the relations between social rules and individual behaviours; our dissatisfaction with Hayek’s theory of markets mainly concerns, in fact, his belief in the existence of an ‘empirical’ tendency of market economies toward equilibrium.

The origin of our view is to be found in Menger’s works. For Menger, it is clear that a market economy is *not* a universal and unchanging system of agent coordination. In accordance with Menger’s evolutionary approach of the emergence of institutions (Menger, 1871 / 1976, pp. 232-286; 1883 / 1963, pp. 127-161), this kind of economy is the result of a slow process of self-organization and self-reinforcement. This process can take on the most various forms and, therefore, explain the diversity and specificity of market and market organization types. For Menger, the origin of this process is located in the existence of a production economy, which ignores market mechanisms (Menger, 1871 / 1976, p. 236). In these “isolated domestic economies”, production is not directed towards exchange transactions between anonymous agents². The technical division of labour is present but “self-sufficiency” is prevailing. The second stage of the process consists in the introduction of a craftsmen system where producers use inputs belonging to consumers in order to provide them with outputs in counterpart of a material levy. In a third stage, production on order is introduced. However, its inefficiency prevents its generalization: temporal distortions indeed appear in supplying as well as in delivery. This failure of the production on order system then paves the way to the “institutional arrangements” (Menger, 1871 / 1976, p. 238), according to Menger’s expression of market economies characterized by organized markets,

² This analysis shows how the assumption that the Austrian School coped with pure exchange economies is superficial.

intermediaries between producers and consumers and monetary institutions (cf. Arena, 1999, p. 24). The self-organized and self-reinforced aspect of this evolutionary process explains why initial conditions and followed paths are different according to the country or the culture, which is considered. The variety of the forms of market organization thus precludes the existence of a unique model of market economy. These forms, however, cannot be assimilated to competitive imperfections, as it is in the CEE model. They correspond to different degrees of exchangeability (Menger, 1871 / 1976, p. 241), which depend on four main factors.

The first factor is related to the various forms of trade organization. These forms differ according to the size of supply and demand (ibid. p. 243), the means of information circulation, the accessibility of markets and their working mechanisms, as well as the prevailing legislation (ibid. pp. 248 and 249). The second factor is connected to the location of agents and the spatial constraints of transactions (ibid. p. 251). The third factor concerns the mechanisms of auction and the habits and methods of bargaining. These mechanisms do not always imply flexible prices. Menger does not exclude the possibility of sticky or rigid prices (ibid. pp. 251-252). The fourth factor refers to the length of the period during which transactions are allowed, their periodicity and to the purchase rate. These elements correspond to the temporal constraints of transactions (ibid. pp. 252-253). These constraints do not mean that Menger always assumes market clearing. He explicitly considers the occurrence of inventories and this possibility obviously depends on the flexibility of prices.

In Menger's approach, markets diversity is therefore assumed. The four factors we just mentioned are related to the degree of exchangeability of markets. However, in his explanation of market diversity, Menger combines them with natural rules or habits. The mention of these rules or habits is important since it shows that, for Menger, market transactions are 'embedded' in a specific social and cultural context and have to be studied, taking this context into account.

Wieser resumed Menger's criteria of market diversity and used them to define a real institutional typology of markets. Some of these markets are "organized" according to some permanent and specific rules (Wieser, 1927 / 1967), pp. 173-176). Others are "disorganized" (ibid. p. 175) and represent a kind of economic pathology, which might explain the existence of panics, for instance. If Menger's criteria play a major role in Wieser's typology of markets, Wieser however took a step forward, emphasizing what he called "exchange institutions", defined as a supplementary element of market diversity. These "institutions" first refer to the various forms of property and contract rights. These rights are essential since, in each specific market, they determine what is, and what is not allowed. Therefore, they shape the nature of market transactions in accordance with law and, beyond it, "social institutions" (ibid. p. 172). Exchange institutions also refer to agents' "customs" (ibid. p. 179). Wieser

characterizes “customs” as permanent social rules, which agents follow when they make transactions on markets. They are similar to what modern economic analysis would characterize as “routines”. Routines or customs are especially significant to understand why market conditions are always changing gradually (ibid. p. 179).

Lachmann inherited this type of approach from the Menger-Wieser Austrian tradition. He also emphasized the fundamental diversity of markets (Lachmann, 1983, p. 3) and his criteria are close to Menger’s ones. The first one refers to the organizational and spatial specificity of markets (ibid. p. 3), which Menger also identified. The second criterion is related to the forms of auctions and bargaining methods, as in Menger. Combining the two already mentioned by Menger, namely, sticky prices and inventories, Lachmann oppose fix price markets and flexible price markets. Far from conceiving the first type of market as an anomaly, Lachmann rather considers that it results from the process of commodity standardization, which permits producers to impose supply prices on consumers. The third criterion put forward by Lachmann is related to the nature of market intermediaries: for instance, the presence of arbitrageurs or speculators on a specific market implies very different market mechanisms (Lachmann, 1986, p. 125). The fourth criterion derives from Menger's seminal distinction between exchange economies and production economies. Lachmann indeed opposes consumers' markets and producers' markets. Thus, for instance, substantial productive capacities and strong technological complementarities tend to imply sticky prices, but the latter can be rendered more flexible by the introduction of an intermediary.

These preceding developments show how Menger, Wieser and Lachmann all contributed to put an institutionalist typology of markets in the place of the idea of a universal model of market. Within this typology, decentralized social interactions between agents play a major role. Hayek strongly contributed to stress this aspect when referring to the social division of knowledge: if we disagree with Hayek’s belief in the existence of a tendency of market economies towards equilibrium, we however welcome his conception of ‘dispersed information’. Now, one of the major consequences of this ‘division of knowledge’ is the fact that a substantial part of agents’ knowledge is strictly tacit and private (see on this point the influence of M. Polanyi (1965) on Hayek). Consequently, this part of individual knowledge cannot be transferred to another agent. Agents are not able to acquire a complete knowledge of past actions of other participants to markets, neither they are able to forecast their future actions. Market coordination then requires an *indirect* way of knowing and understanding the various strategies of other individuals. This way belongs to the realm of what Hayek called “unorganized knowledge” or “knowledge of the particular circumstances of the moment and the place” (Hayek, 1945 / 1949,

p. 80). Agents accumulate this type of knowledge through the use of some persistent behavioural rules. It is not worth to analyze here the forms of these rules. What is more important is to note that they always suppose some type of social interaction. According to Hayek, two main types might be distinguished. The first is mimetic. It consists in the imitation of other individuals' observed actions. Then, this imitating behaviour is revised according how the rule that has been chosen actually performs. If the rule makes the agent better off, then it is repeated. Therefore, the mimetic attitude gradually endogeneizes the rules governing the behaviour of observed and imitated agents. The second type of social interaction corresponds to the innovative attitude. In this case, the agent tries to imagine and to introduce a new kind of behaviour and, here again, he observes how it performs. If the agent realizes that the innovative behaviour makes him better off, then, he reiterates this conduct and, little by little, he assimilates the rule(s) that govern(s) it. Innovative attitudes are not always successful however. A process of "trial and error" is often necessary in order to find the behavioural rules that fit with the social context.

Rule following does not always derive from mimetic or innovative attitudes. Agents also unconsciously adopt some social rules. Some are inherited conventions. Others are the legacy of culture. Others, finally, are imposed by law (see Hayek, 1973 / 1980, p. 52). Beyond this diversity, the existence of rules however shows how decentralized social interaction is important to understand the working of markets³. It is now time to check it, considering the market realities of the NE.

3. The markets of the 'new economy' in the Austrian perspective

In this last part of our contribution, in accordance with Wieser and Lachmann's approaches, we will define a typology of the markets of the NE, which combines Menger's criteria of market diversity and Hayek's focus on decentralized social interactions. The empirical foundation of this typology is obviously rooted in the two main types of markets, which appeared with the emergence of the NE, namely, electronic markets (see, for instance, Burton-Jones, (1999) and Currie (2000)) and technological markets (see Guilhon, 2001). These two empirical types of markets will give birth, in our typology, to the four following kinds of markets.

³ The role of rule emerging and rule following on Hayekian markets has been especially stressed in the literature these last years: see Birner (1999), Garrouste (1999a, 1999b), Schmidt and Versailles (1999), Ioannides (1999), Rizzello (1999).

B2C direct e-markets

These markets are those to which commentators refer when they interpret the NE as the achievement of the type of market coordination analyzed in the CEE model. Strong objections can, however, be raised against the idea of tendency to desintermediation on these markets.

Quite the reverse, a process of reintermediation or substantial changes in intermediation is presently occurring on these markets. Usual intermediaries are indeed replaced with 'infomediaries'. These new forms of intermediation are especially useful when consumers are confronted with complex digital producers and numerous web sites. In this case, their decisions are indeed particularly difficult. From this angle, it can be seen that new intermediaries introduce a kind of ancillary market, which offers to consumers a bundle of services and information dedicated to help them to make choices. They also try to take into account problems related to the safety of transactions, namely, secure payments, product quality or delivery guarantee. This new form of intermediation also appears in the case of gates. Gates are not only entry points for purchase. Very often, they combine a search engine, an organization of available information, a means of interactivity between intermediaries and demanders and possibilities for personalization in individual choices. All these aspects stress how much the Austrian tradition is right when it stresses the importance of intermediaries and their impact on the formation of subjective consumers' preferences. Moreover, it is striking to note that today, intermediaries tend to become information providers, in accordance with Hayek's view of the division of knowledge. E-market bundling indeed confirms the impossibility of defining an *a priori* list of identified consumer preferences and standardized goods. Generally, on B2C markets, the nature of goods and the formation of preferences emerge from the interactivity between intermediaries and consumers and social uses are created through the use of Internet. Moreover, consumers are also interacting between each other through 'peer-to-peer' communities (such as Napster or Gnutella), in order to exchange digital goods, for instance, music, or information on prices or quality of new products. Thus, they do influence the determination of the use-value of goods.

B2C direct e-markets are not only characterized by the existence of 'infomediaries' but also by bargaining modes. Now, various auction systems are used on e-markets and most of them are not Walrasian. First, they do not only concern prices but also delivery or payment dates and, even sometimes, the very nature of goods (Raisch, 2001, p. 23). Secondly, the variety of auction systems is substantial⁴. Some offer fixed prices associated with a catalogue, others, sticky prices that are revised from time to time. Producers or consumers auctions do

⁴ The commonly used auction types are the open-cry (or English) auctions, single and multiple round sealed bid auctions and Dutch auctions. See M. Kumar and S. Feldman (1999), "Internet Auctions", PDF.

also exist. Finally, quick auctions can also occur, limiting the time of bargaining to an *a priori* fixed period (Raisch, 2001, pp. 136-137). Here again, the Austrian view appears to be very useful since it distinguishes markets according to the method of bargaining and the system of auctions. On the contrary, the idea of a generalized Walrasian auction price system is clearly disputable.

Spatial and temporal constraints are also important on B2C direct e-markets. Direct e-markets are indeed defined as those where order and delivery are both electronic and where also the products themselves are digital. These features are specific to this type of market and imply that spatial and temporal constraints do not play a major role in its working. Here again, Menger's typology appears to be particularly relevant.

Wieser's "exchange institutions" are also present on e-markets. A significant example of these institutions or these rules is given by standards. Standards such as *html* (hypertext markup language), for instance, play an essential role in the NE. In the 'old economy', the definition of standards is also playing an important role; the difference, however, lies in the fact that all standards are essentially physical and characterize tangible goods, while new standards are more related to information and collective conventions. Therefore, new standards require a social agreement of the participants to the market in order to set a situation of common knowledge. A consensus must thus emerge in order to allow e-consumers and e-intermediaries to communicate.

Now, what is striking in an Austrian perspective is that standards are never defined *a priori* by hierarchies but that they emerge from self-organized processes that market participants only can approve or disapprove (Picot, 2001, p. 8). These processes are the result of innovative *and* imitative behaviours, in accordance with Hayek's approach of the emergence of rules. For instance, some 'dotcom' firms such as *Amazon.com* soon realized, before others that imitated them afterwards, that free information or services through dynamic hypertext or discussion forums allowing internautes to interact between each other could be profitable. This illustrates the role of learning, imitation and innovation in the development of electronic markets.

The reference to exchange institutions also permits to analyze electronic markets as typical self-emerging Austrian markets. E-markets are indeed the result of spontaneous behaviours of different types of actors who affect various aspects of transactions on markets. Production firm managers or intermediaries are exemplary Austrian entrepreneurs. They indeed look for profit opportunities and contribute to the discovery of new products or new markets through a process of trial and error. They are thus shaping market processes on the supply side and these processes emerge as typical unintended consequences of entrepreneurs' decisions. However, entrepreneurs are not the only relevant actors. A second type of agents corresponds to market organizers, i.e., to the very private institutions or professional associations, which contribute to define and

introduce new standards of communication and transfer of information. A third type of actors is constituted by consumers communities which try to influence both the two first types of actors, in order to convince them to build responses in accordance with their requirements and, therefore, also contribute to the emergence of new social use values. It is clear, therefore, that e-markets cannot be analyzed with the usual tools of the CEE model. They are submitted to self-organizing processes and continuous changes, which allow defining them as typical institutional arrangements.

Therefore, social interaction is clearly important on e-markets. The emergence of standards is not however the only example. Another important form of social interaction is related to the role of trust on e-markets. The use of Internet for market transactions indeed entails problems related to the anonymous nature of consumers, products and services. On the one hand, suppliers have important means of identification of consumers' communities but the importance of consumers learning and preferences changes implies the adoption of a systematic 'alertness'. On the other hand, consumers buy new goods and services, which are often virtual. They are therefore confronted to a permanent uncertainty regarding the nature of transacted goods. This is why firms or intermediaries spend important resources to acquire a reputation in order to win consumers' trust. Now, the existence of trust seems to contradict economic rationality in some cases. For instance, the empirical price dispersion, which prevails on e-markets, is not necessarily a market imperfection or a sign of 'market immaturity'. It can derive from both a bundling strategy of intermediaries and the existence of a hierarchy of trust relations in the minds of consumers.

B2C indirect e-markets

The preceding remarks could be resumed and applied to indirect e-markets too. The only difference, which appears when we consider indirect e-markets, derives from the fact that transactions concern tangible goods even if orders are electronic. Within this framework, intermediaries cannot limit their role to the management of information flows. They are confronted with additional problems, which were usual in the 'old economy': for instance, inventory management or financing optimization. In this framework, R&D strategic choices are crucial. They indeed tend to become a deciding factor in the context of the NE. It is easy to see that these new constraints exert immediate effects on trade organization and explain why new types of intermediaries emerge, such as aggregators that try to combine the electronic flexibility of transactions with an inventory management policy; or e-market places, specialized on specific groups of products belonging to some precise human interest (sport, scientific topics, cultural and social subjects, etc.). These new forms of organization are prevalently dedicated to

the decrease of spatial and temporal constraints related to good delivery and technological innovations. Part of the organizational change that is taking place in the NE is interpreted as a reaction to the increasing tension inside the value chain (Gensollen, 2001, p. 7). While increasing returns in the upper stages of production tend to favor cooperation between firms, the increasing need for 'one-to-one' marketing downstream seems to be more adapted to competitive strategies.

B2B e-markets

Very often, the relatively increasing role of B2B e-markets is explained by the reduction of transaction and search costs (see Arena, 2001, pp. 17-18). This factor is certainly essential but does not however imply a tendency to perfect competition. Seen from a Hayekian angle, we might indeed note that B2B e-markets allow a more efficient "discovery process" on markets since they contribute to improve information between firms. A good example of this improvement is given by the changes occurring in marketing activities within e-trade. On usual markets, firms were indeed forced to employ many employees to answer to their customers' preoccupation and improve their knowledge of consumer's preferences. The use of Internet substantially changed this situation. On the other hand, through Internet, firms or intermediaries can easily acquire numerous and various pieces of information related to consumers. These new possibilities allow them to develop a much more efficient marketing policy. For instance, they are now able to aim at precise targets corresponding to specific communities of consumers. These advantages also prevail in the realm of interfirm relations for supplying as well as delivery.

Discovery processes might also be improved by the reduction of strategic uncertainty. New forms of marketplaces indeed imply the utilization of 'hubs', either vertical or horizontal, or e-procurement marketplaces (Raisch, 2001, pp. 211-214). These new types of trade organization allow firms to replace hierarchies with efficient producer markets that are dedicated to specific firm needs and requirements.

Finally, B2B e-markets also help to develop social interactions, which decrease the degree of dispersed knowledge. A significant example is given by subcontracting relations where the generalization of e-trade is sometimes equivalent to a selection process among small and medium firms devoted to find those, which are the most reliable. Another example could again correspond to the emergence of standards. This emergence is comparable to what is happening on B2C e-markets. However, standardization on B2B e-markets also implies a separation between two kinds of markets. When firm needs can be easily defined and give birth to standardized products, B2B e-markets easily replace inter-firm relations. When they are more complex, these relations cannot

be obtained through usual market coordination. From this perspective, it is then necessary to come back to firm agreements or to introduce ‘technological markets’.

Technological markets

Technological markets concern transactions related to scientific and intangible assets.

“These assets are protected by intellectual property rights in the form of patents, copyrights, licenses and patterns. These markets are likely to transfer knowledge already established or on the way to be. To some extent, they shape relationships between instrumental knowledge and activities that represent the firm’s value chain: research, development, conception, production, marketing.” (Guilhon, 2001, p. 11).

These products first require strong temporal constraints: most of time, producers who buy or sell on technological markets have to build long-term relations based on trust and mutual knowledge. They sometimes also imply geographical constraints when, for instance, suppliers and buyers belong to a network, which entails externalities and proximity effects. It is for instance the case when the market is related to an industrial district or, to some extent, to a national system of innovation. Technological markets also provide a significant example of the limits of the CEE model definition of fundamentals. On these markets, it is indeed perfectly impossible to define, *a priori*, sets of preferences or catalogues of techniques. Firms are looking for instrumental knowledge, the use of which is partially ignored by them, and which they contribute to create during both stages of conception and production of goods.

Technological markets also exist because of the existence of a Hayekian division of knowledge in the economy. They indeed allow transactions of codified and explicit knowledge between firms. However, firms do not acquire this knowledge for itself but rather to complete the tacit and private knowledge that forms the basic resource of firms.

Finally, technological markets imply relations of trust and mutual knowledge, namely, forms of social interaction that cannot be reduced to price coordination. This is why Lundvall labeled these markets “rather organized markets”, while Guilhon referred to them as “quasi-markets”. This mixture of electronic hierarchies and e-market coordination does not fit so well with Hayek’s view of the market order. According to us, however, they are perfectly compatible with the Menger-Wieser-Lachmann line of interpretation.

Some conclusive remarks and limitations

The rise of direct B2B e-trade during the last decade lead some observers to interpret it as a confirmation of the relevance of the CEE model view of market coordination, even if the statistical importance of this trade still remains very modest. However, the introduction of a typology, which includes direct and indirect B2C and B2B e-trade, as well as technological markets, substantially weakens this interpretation. The observed diversity of trade organization forms, bargaining and auction systems, and spatial and temporal constraints rather contributes to revive the old Austrian tradition, all the more so since an essential role is played by social coordination mechanisms on markets. This reference to the Austrian tradition does not mean, however, that the NE confirms Hayek's conception of the market order. Quite the contrary, the NE exhibits the emergence of a multiplicity of market types, which does not contradict the idea of a spontaneous order, but excludes the deterministic tendency towards a market order characterized *a priori*. This is why our Austrian reference only concerns its Mengerian origin and its post-Mengerian developments. Neither it means that Austrian theory is the only one able to offer a proper theoretical framework for understanding the emergence of new markets in the NE. On the one hand, this theory does not seem to provide a ready-made analysis of supply phenomena, which appear on the markets of the NE. Kirznerian entrepreneurship is certainly not sufficient from this standpoint. We are here confronted to a usual shortcoming of the Austrian tradition, namely, its neglect of organization and planned institutions. Now, one of the problems of the NE is indeed, in some cases, the absence of control of supply by demand. The defenders of the CEE view often argue that IT make markets more transparent. This assertion is strongly dubious. Internet markets are not more transparent than traditional markets (cf. Brynjolfsson and Smith, 1999). Quite the contrary, they are organized in a way which allows a tighter control of producers on demand. This is permitted by the introduction of new forms of marketing and advertisement, by the emergence of new standards and institutional arrangements and, by the ability of firms to generate the creation of consumer communities which individuals are induced to belong to. From this standpoint, other contributions might be utilized, such as the Marshallian one, for instance (see, Arena, 1999, 2001 and 2002). On the other hand, if the Menger-Wieser-Lachman line of interpretation provides a broad framework for the analysis of various types of price formation mechanisms, it does not go very far however. Hayek's 'empirical' tendency towards equilibrium cannot offer a solution. Here again, it is necessary to use other lines of contributions, which have little in common with the Austrian tradition. We could refer, for instance, to "cognitive economics", which focus on the role of social interactions in the working of markets. What our contribution, therefore, suggests is that the Austrian approach is

useful to explain some important features of the markets of the NE, but also that it must be completed and included in the broader perspective of institutionalist economics.

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